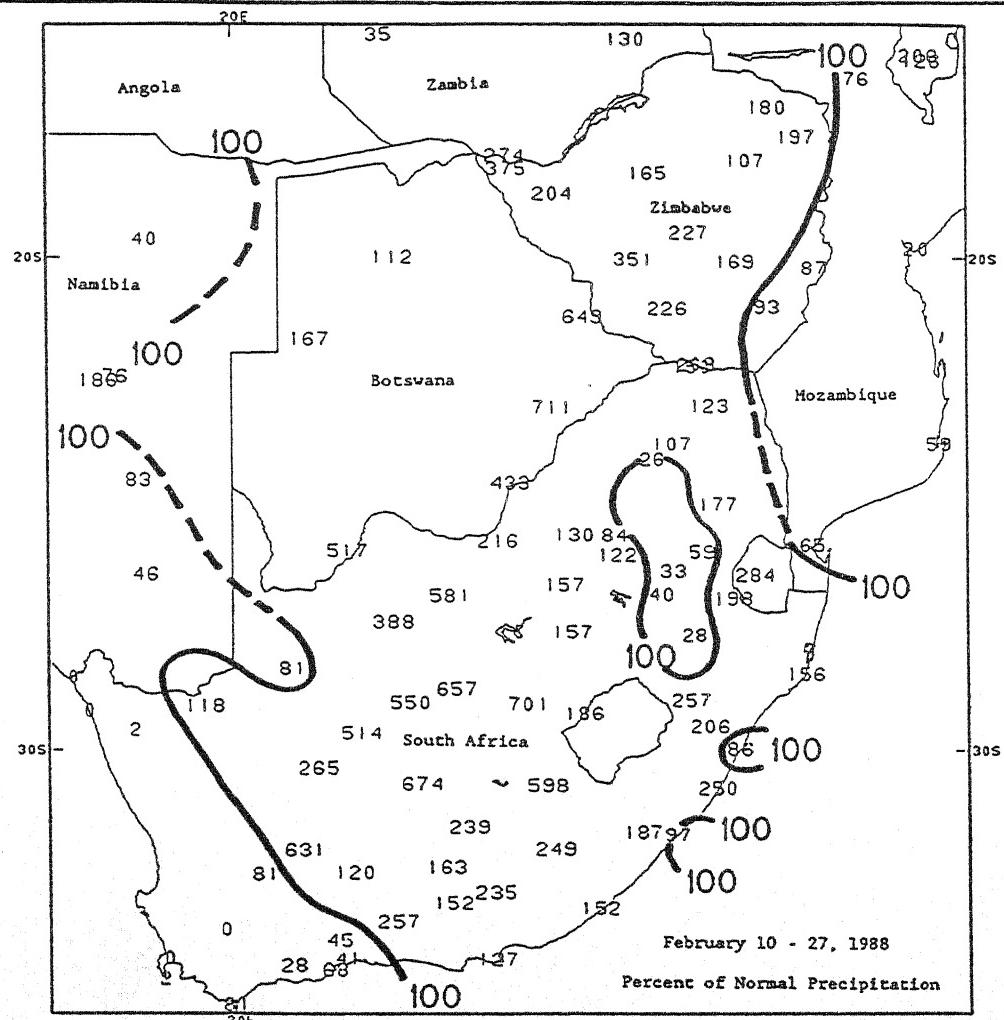


# WEEKLY CLIMATE BULLETIN

No. 88/09

Washington, DC

February 27, 1988



THE LAST EIGHTEEN DAYS HAVE BEEN UNUSUALLY WET IN SOUTHERN AFRICA

NOAA - NATIONAL WEATHER SERVICE - NATIONAL METEOROLOGICAL CENTER

## WEEKLY CLIMATE BULLETIN

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This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief, concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

Highlights of major global climatic events and anomalies.  
U.S. climatic conditions for the previous week.  
U.S. apparent temperatures (summer) or wind chill (winter).  
Global two-week temperature anomalies.  
Global four-week precipitation anomalies.  
Global monthly temperature and precipitation anomalies.  
Global three-month precipitation anomalies (once a month).  
Global twelve-month precipitation anomalies (every 3 months).  
Global temperature anomalies for winter and summer seasons.  
Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Center via the Global Telecommunication System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

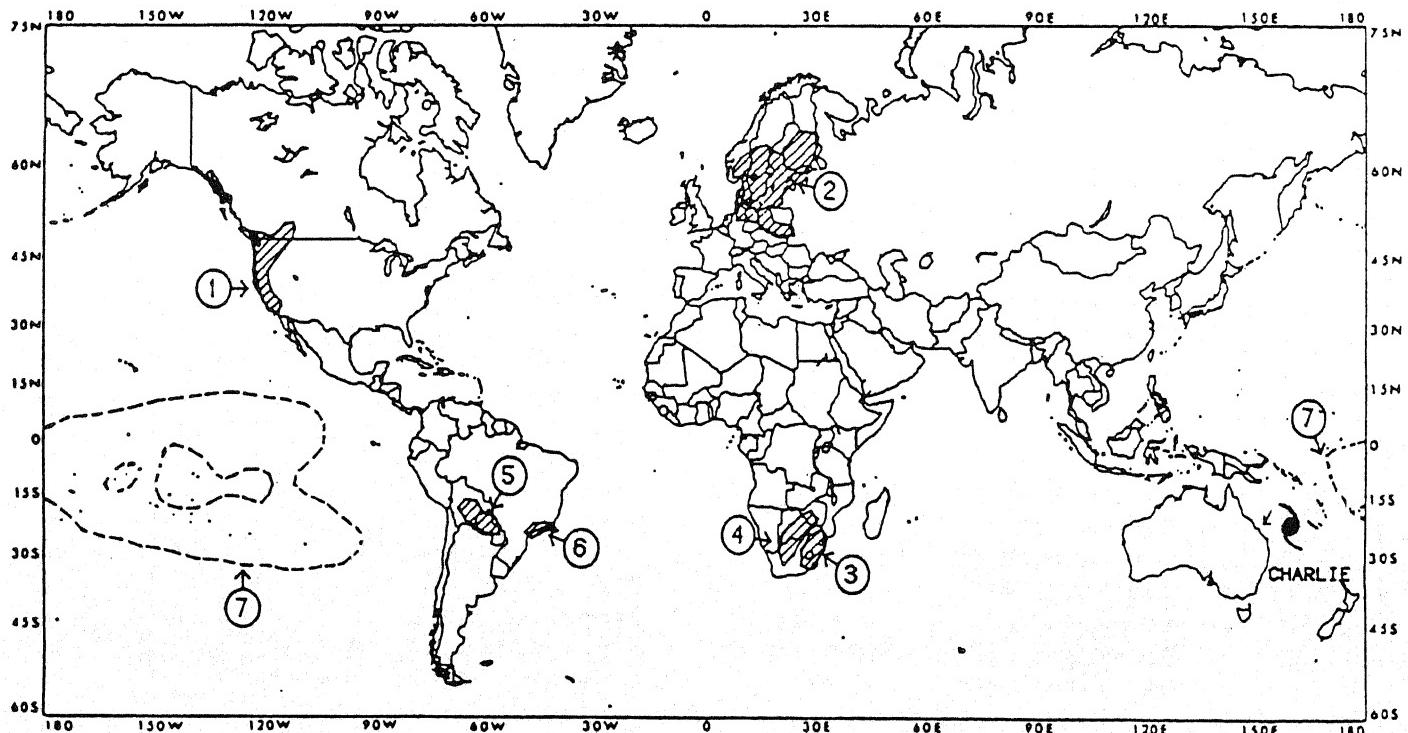
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# GLOBAL HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF FEBRUARY 27, 1988  
(Approximate duration of anomalies is in brackets.)

1. WESTERN UNITED STATES AND SOUTHWESTERN CANADA: UNUSUAL DRYNESS PERSISTS.  
Little or no precipitation, less than 20.7 mm (0.82 inch), fell in the western United States and adjacent parts of Canada last week (see Special Climate Summary) [6 weeks].
2. NORTHERN EUROPE: UNUSUALLY WET CONDITIONS CONTINUE.  
Moderate precipitation, as much as 71.6 mm (2.82 inches), occurred in southern Scandinavia and parts of East Germany and Poland last week [6 weeks].
3. EASTERN SOUTH AFRICA: HEAVY RAINS END DRYNESS.  
Heavy precipitation, up to 200.4 mm (7.89 inches), last week ended the unusually dry conditions there [Ended at 7 weeks].
4. ZIMBABWE, BOTSWANA, AND NORTHERN SOUTH AFRICA: MORE HEAVY RAINS.  
Unusually heavy precipitation fell again last week with some stations reporting up to 315.1 mm (12.41 inches) of rain (see Special Climate Summary) [2 weeks].
5. BOLIVIA AND PARAGUAY: DRY CONDITIONS END.  
Heavy precipitation, up to 209 mm (8.23 inches) last week, ended the dry conditions in Bolivia and Paraguay [Ended at 9 weeks].
6. BRAZIL: WETNESS DIMINISHES AROUND RIO DE JANEIRO.  
Light precipitation, generally less than 28.2 mm (1.11 inches), fell in the vicinity of Rio de Janeiro as unusually wet conditions of earlier weeks eased [Ending at 3 weeks].
7. CENTRAL AND EASTERN TROPICAL PACIFIC: REFER TO JANUARY 1988 ON EL NINO/SOUTHERN OSCILLATION (ENSO) ADVISORY.  
The sea surface temperatures remained 1°C (1.8°F) to 2°C (3.6°F) above normal through January. The area above 1°C (1.8°F) is outlined for January 1988. The February 1988 ENSO Summary will appear in the middle of March.



Approximate locations of the major anomalies and events described above are shown on this map. See the other world maps in this Bulletin for current two-week temperature anomalies, four-week precipitation anomalies, and (occasionally) longer-term anomalies.

# U.S. WEEKLY WEATHER HIGHLIGHTS

FOR THE WEEK OF FEBRUARY 21 THROUGH FEBRUARY 27, 1988

Dry weather prevailed across much of the contiguous United States as heavy precipitation was limited to south-central Alaska and Hilo, Hawaii (see Table 1). Light amounts fell in parts of coastal California, upper Michigan, southern Mississippi, central and southern Florida, and from western Tennessee northeastward to northern New York. Little or no precipitation was observed in the western two-thirds of the country, in much of the Midwest and Southeast, along the mid-Atlantic coast, and in portions of northern New England. The lack of significant rainfall in the West last week has further added to the region's seasonal precipitation deficit (see page 3).

Above normal temperatures were common west of the Mississippi River as largest departures (between +11 to +14°F) occurred in Montana, Wyoming, and the Dakotas (see Table 2). Temperatures in the eastern third of the nation averaged below normal as Florida recorded departures of -6 to -10°F. Unusually mild conditions returned to Alaska as the largest above normal readings were found in the western and northern part of the state.

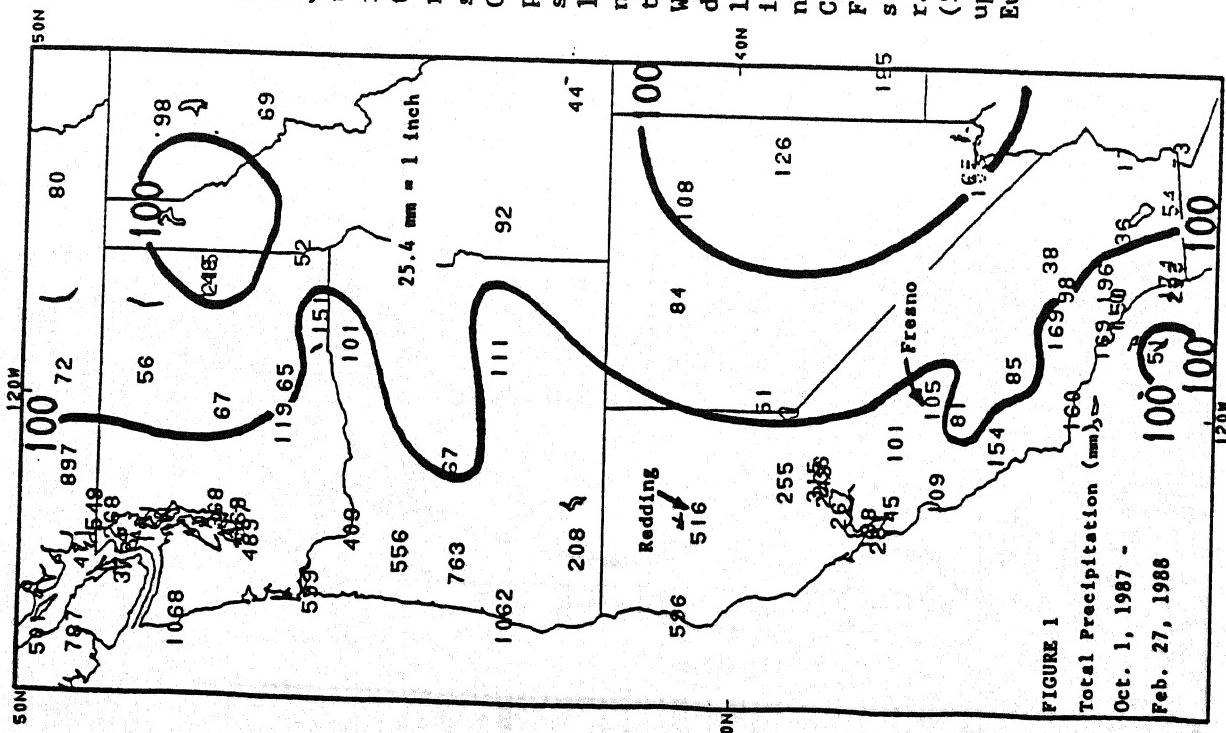
TABLE 1. Selected cities with more than one inch of precipitation for the week.

Yakutat, AK	4.09	West Palm Beach, FL	1.55
Hilo, HI	3.84	Sitka, AK	1.30
Kodiak, AK	3.58	Hancock, MI	1.20
Cordova, AK	3.47	Nome, AK	1.03
Valdez, AK	2.88		

TABLE 2. Selected cities with temperatures averaging higher than 10°F above or lower than 5°F below normal for the week.

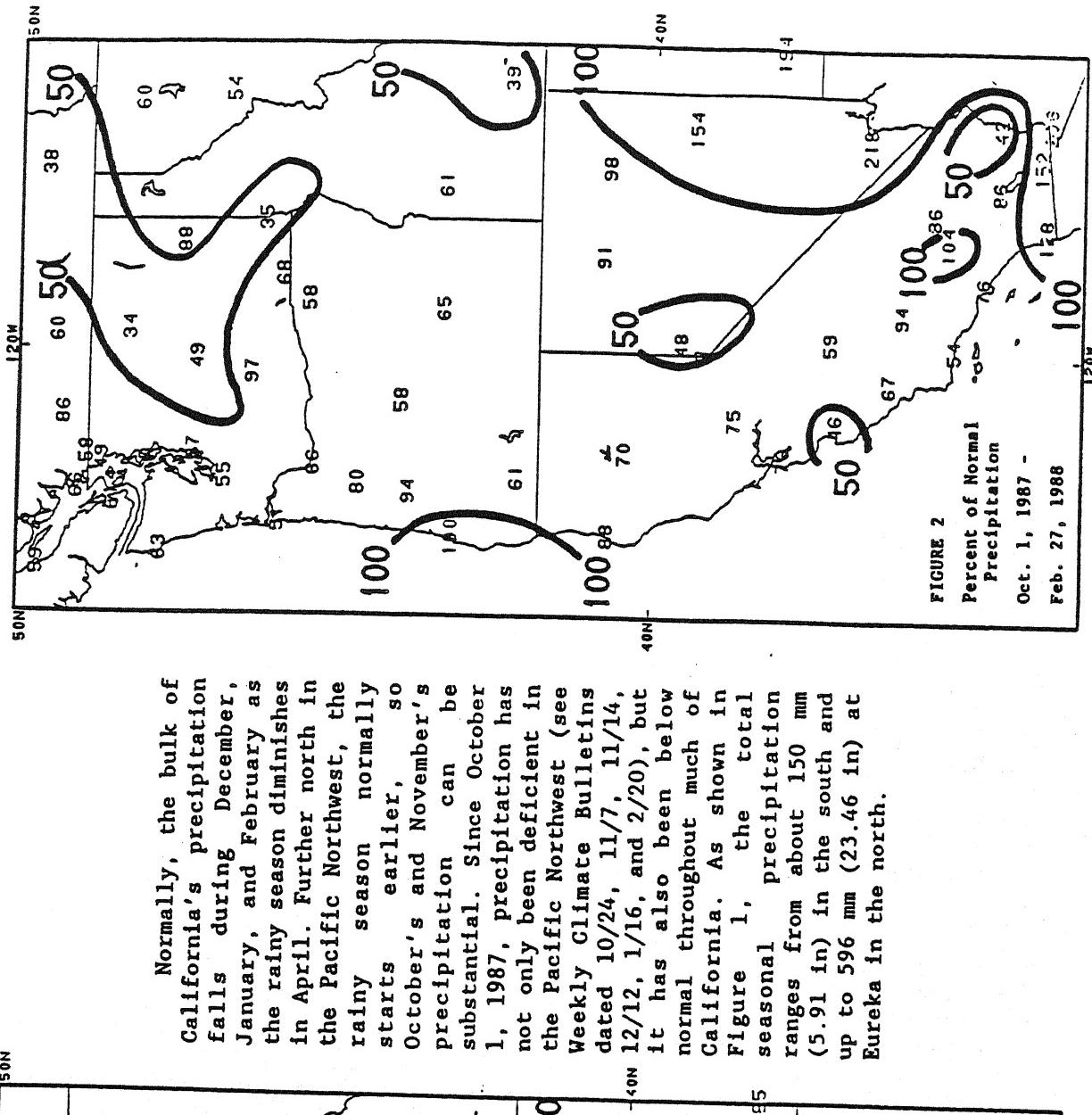
Barter Island, AK	+19	Jamestown, ND	+11
Glasgow, MT	+14	Worland, WY	+11
Fairbanks, AK	+13	Rapid City, SD	+11
Devil's Lake, ND	+13		
Minot, ND	+13	Gainesville, FL	-10
Kotzebue, AK	+12	Daytona Beach, FL	- 8
Havre, MT	+12	Tallahassee, FL	- 8
Miles City, MT	+12	Jacksonville, FL	- 7
Barrow, AK	+11	Melbourne, FL	- 6
Unalakleet, AK	+11	St. Petersburg, FL	- 6
Cut Bank, MT	+11	Vero Beach, FL	- 6
Bismarck, ND	+11	Brunswick, GA	- 6
Dickinson, ND	+11	Sumter/Shaw AFB, SC	- 6
Williston, ND	+11	Bluefield, WV	- 6

## MUCH OF CALIFORNIA EXPERIENCING BELOW NORMAL WINTER PRECIPITATION

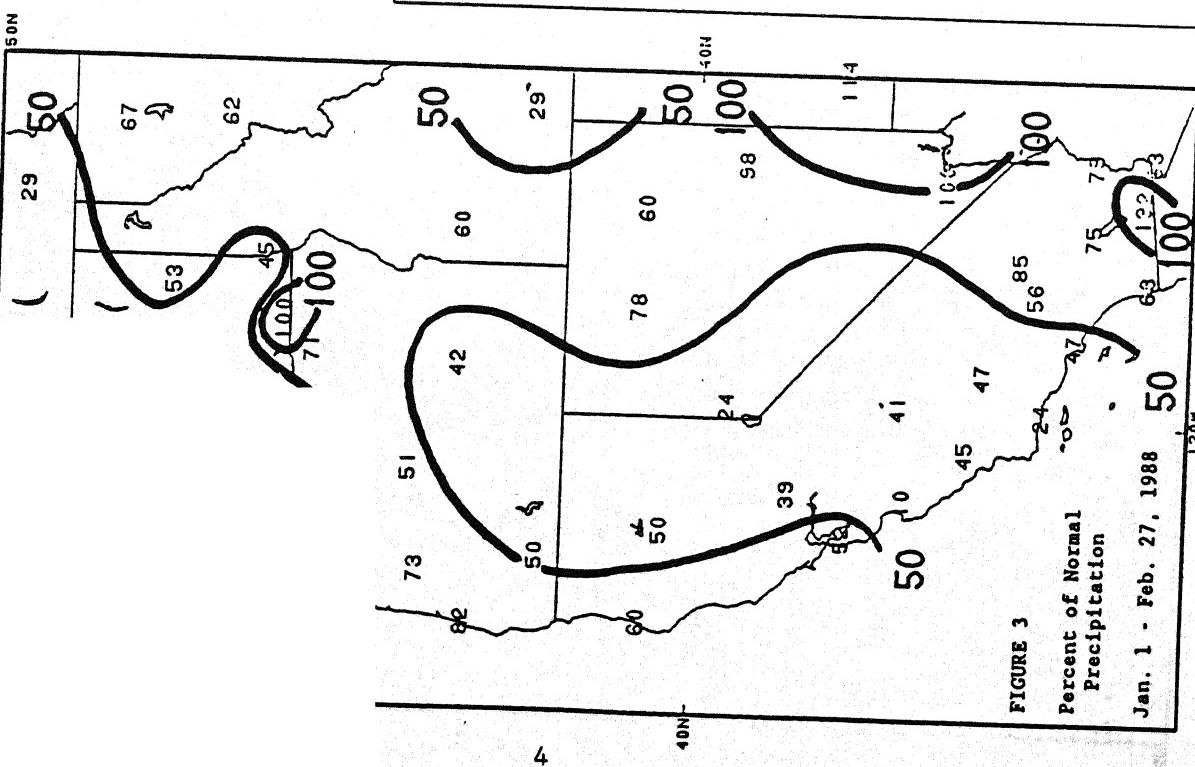


**FIGURE 1**

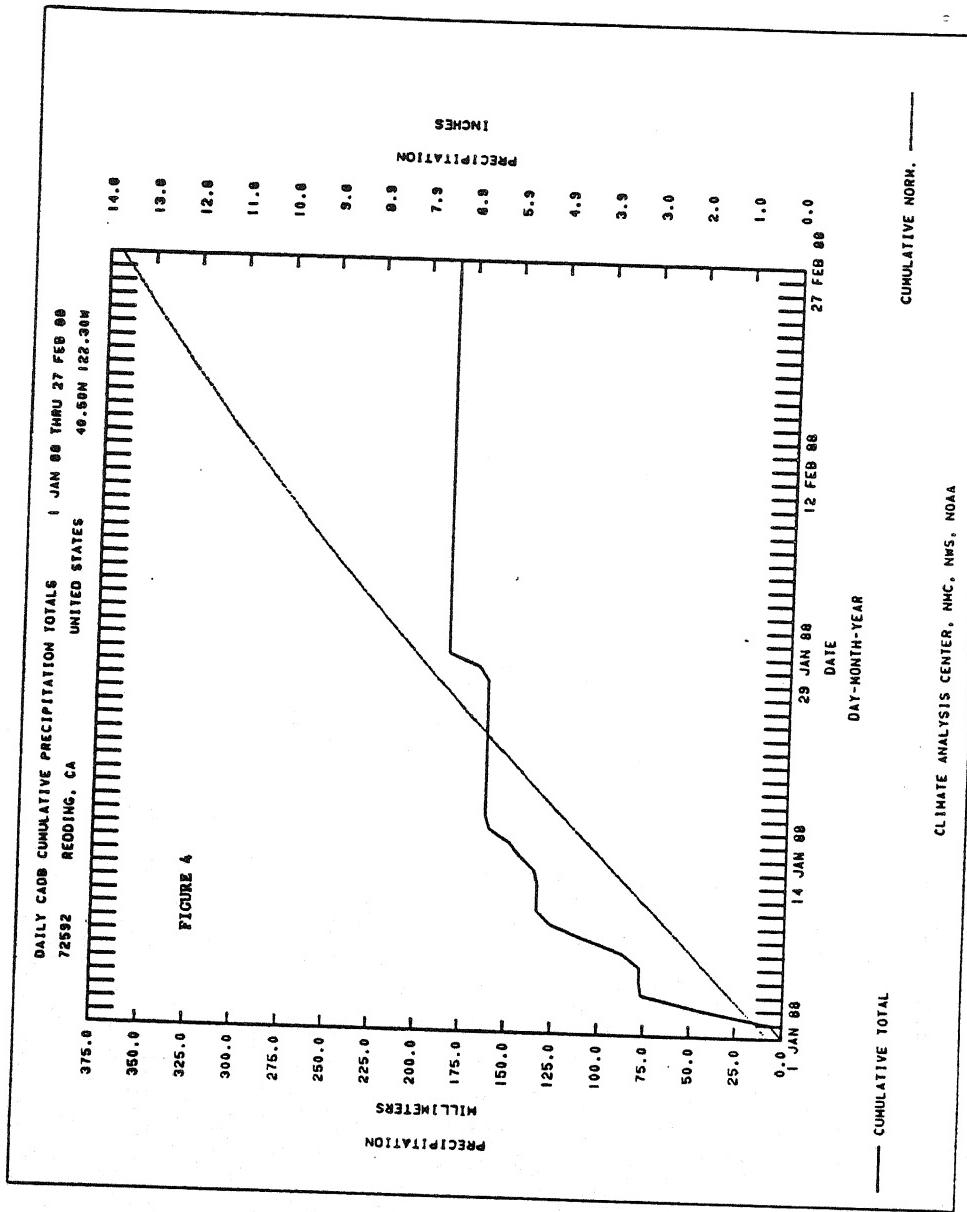
Normally, the bulk of California's precipitation falls during December, January, and February as the rainy season diminishes in April. Further north in the Pacific Northwest, the rainy season normally starts earlier, so October's and November's precipitation can be substantial. Since October 1, 1987, precipitation has not only been deficient in the Pacific Northwest (see Weekly Climate Bulletins dated 10/24, 11/7, 11/14, 12/12, 1/16, and 2/20), but it has also been below normal throughout much of California. As shown in Figure 1, the total seasonal precipitation ranges from about 150 mm (5.91 in) in the south and up to 596 mm (23.46 in) at Eureka in the north.



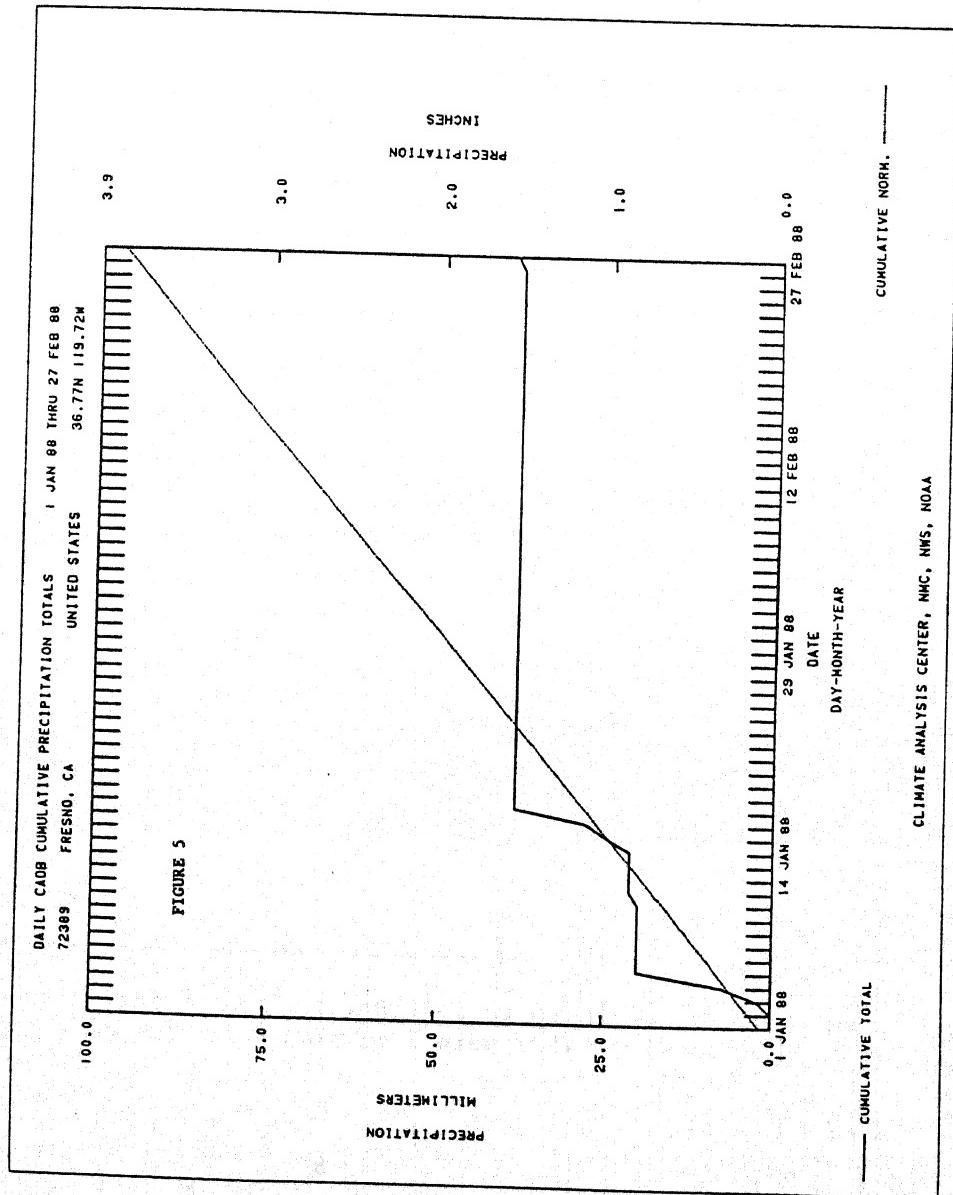
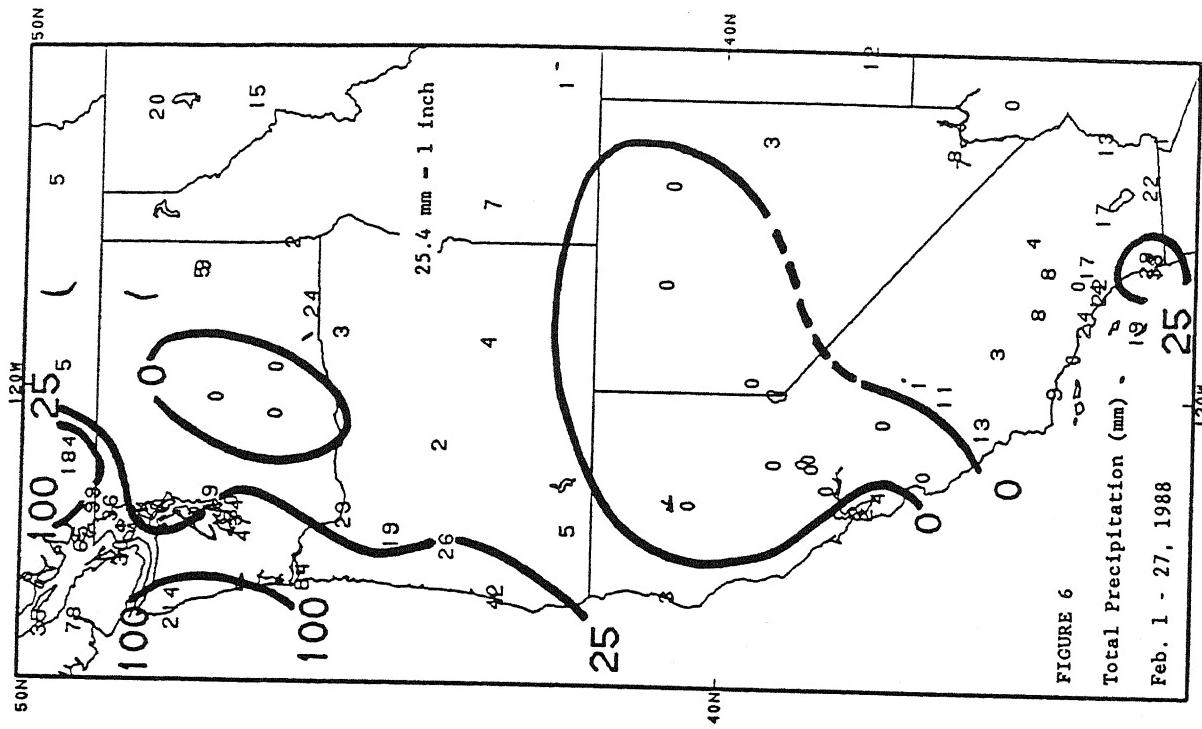
**FIGURE 2**  
Percent of  
Precipitation  
Oct. 1, 1961  
Feb. 27, 1962

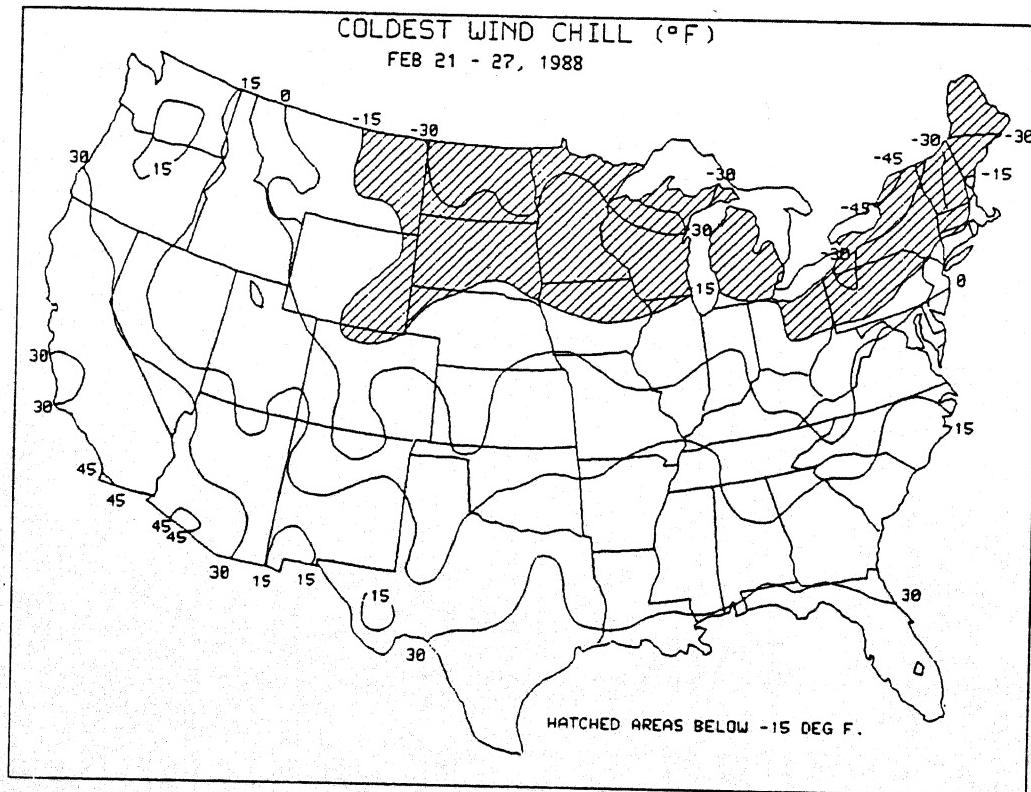
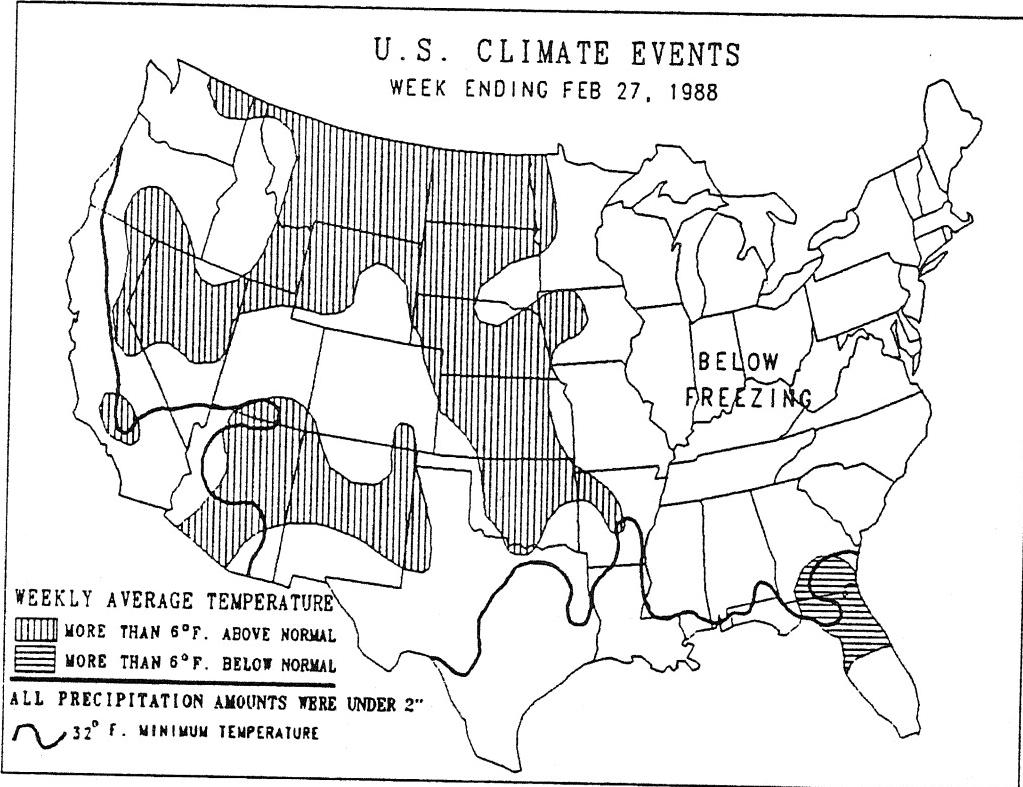


After much of California received above normal rainfall in October and early November, the amounts in Figure 1 now represent only 50-75% of the normal seasonal precipitation (see Figure 2). Only the extreme southern part of the state is near to above normal. In Figure 3, a large area with less than half the normal precipitation since January 1 covers much of California, Oregon, and Washington. The lack of significant rainfall in late January and February accounts for much of the seasonal precipitation deficits in California.



Further examination of locations in northern and central California, namely Redding (Figure 4) and Fresno (Figure 5), respectively, reveals that little or no measurable precipitation has fallen in these cities since late January. Overall, the widespread area of minimal precipitation during the first 27 days of February is more clearly defined in Figure 6. In order to raise seasonal precipitation deficits closer to zero, considerable rainfall is needed in the next few months in both California and the Pacific Northwest.

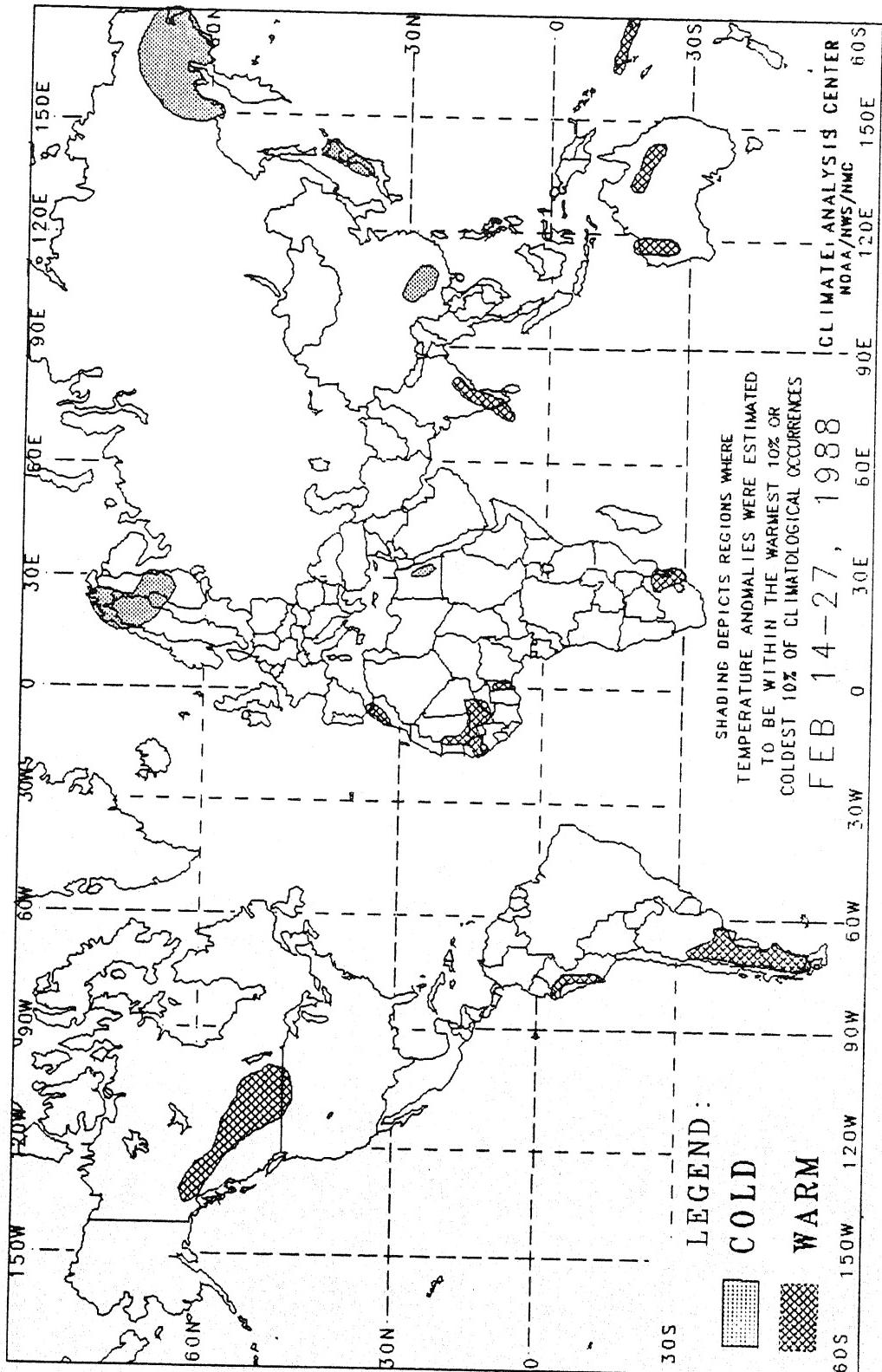




Temperatures continued to moderate last week across most of the United States. Wind chills below  $-45^{\circ}\text{F}$  were limited to extreme northern New York State.

# GLOBAL TEMPERATURE ANOMALIES

## 2 week



The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

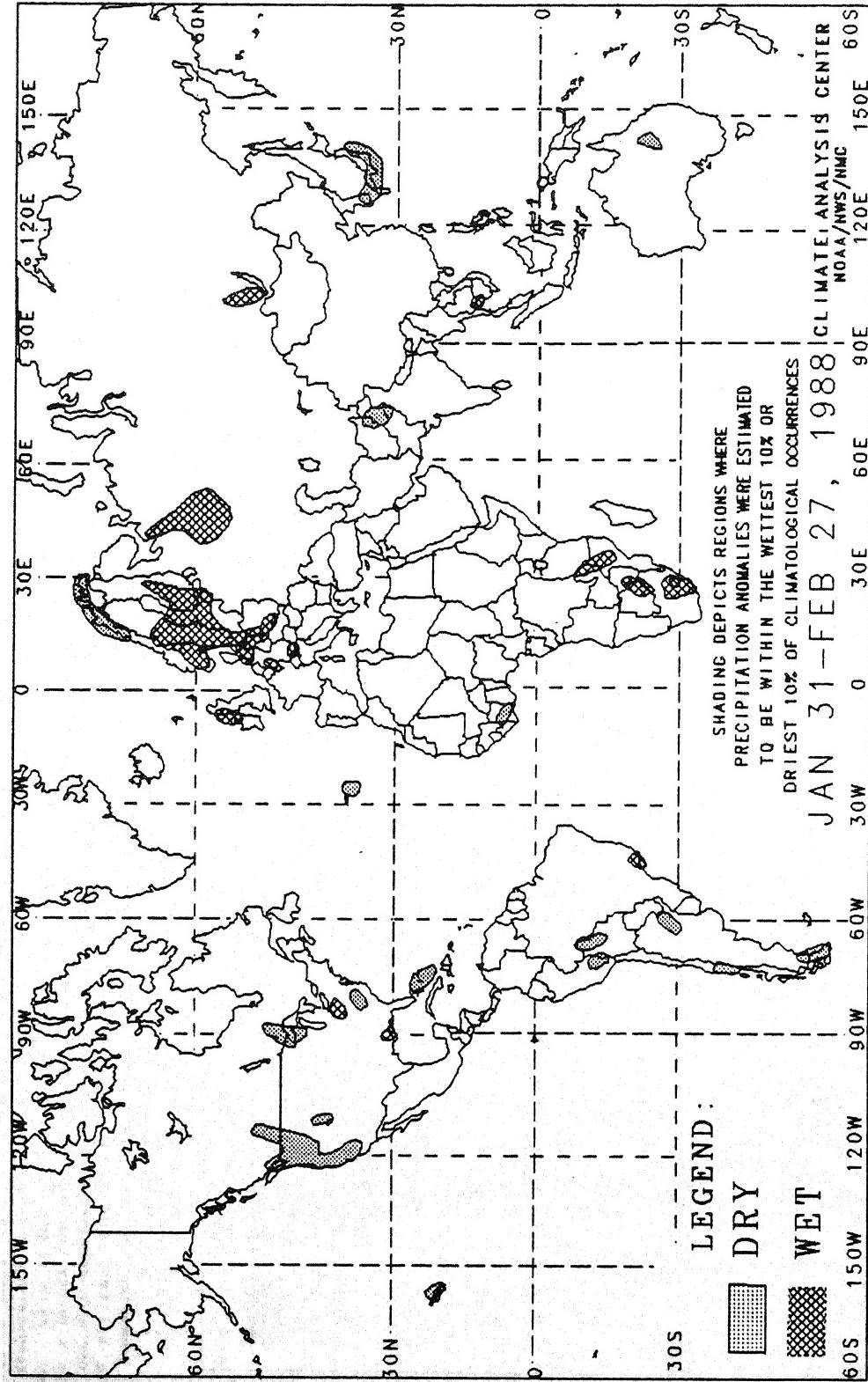
Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

# GLOBAL PRECIPITATION ANOMALIES

4 Week



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

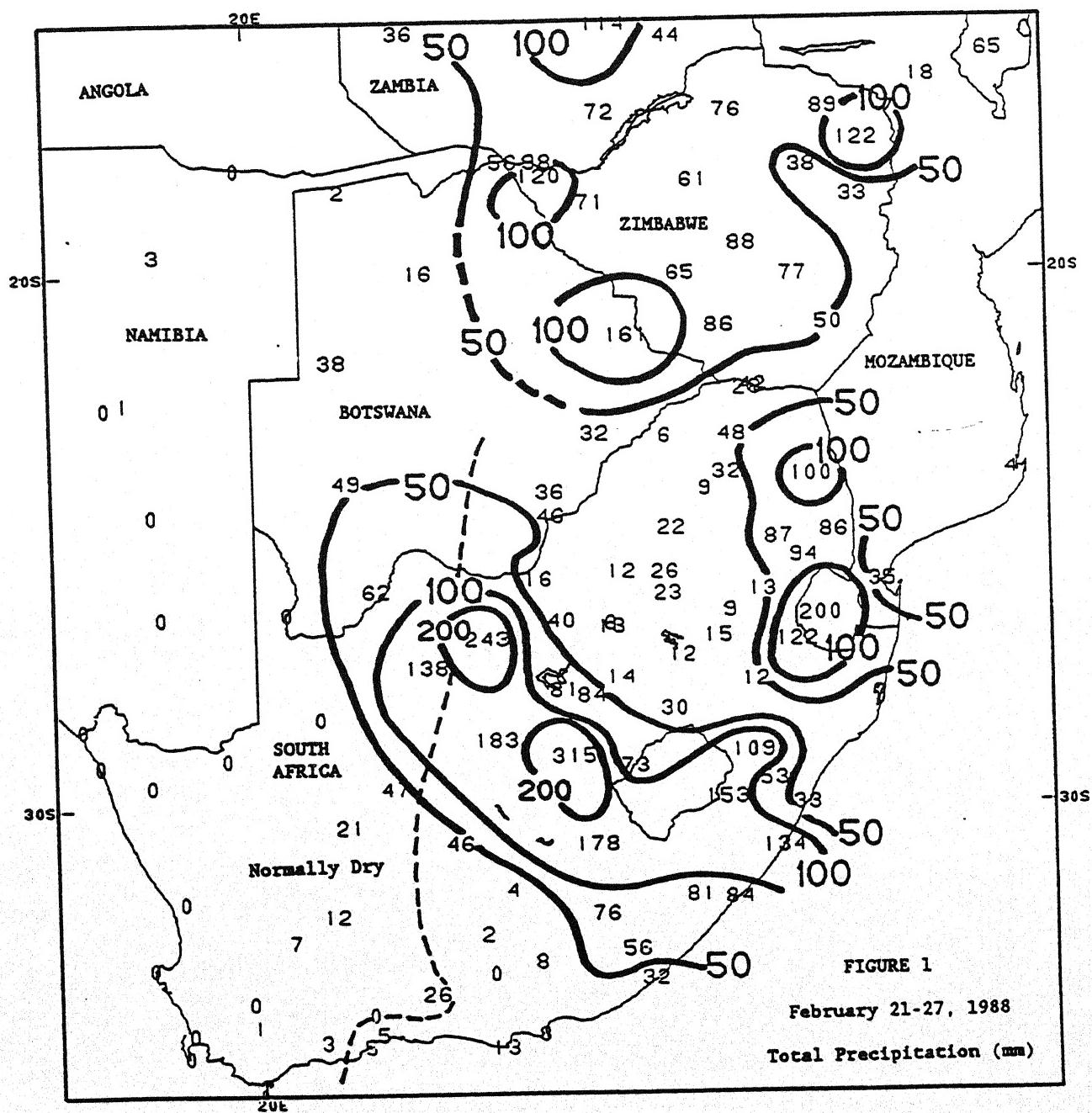
The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

# SPECIAL CLIMATE SUMMARY

Climate Analysis Center, NMC  
National Weather Service, NOAA

FOR THE SECOND CONSECUTIVE WEEK, TORRENTIAL RAINS HIT  
PARTS OF SOUTH AFRICA, BOTSWANA, AND ZIMBABWE

For the second straight week, heavy precipitation inundated portions of South Africa, Swaziland, Lesotho, eastern Botswana, and Zimbabwe (see Figure 1). Largest weekly totals were concentrated near the South African cities of Aliwal North (178 mm), Kimberley (183 mm), Vryburg (243 mm), and Bloemfontein (315 mm), while the Swaziland city of Manzini received 200 mm. Isolated heavy amounts also fell near Francistown, Botswana (161 mm) and Mtoko, Zimbabwe (122 mm).



Since the approximate start of the heavy rains (Feb. 10), totals over the period have exceeded 200 mm in north-central South Africa, eastern Botswana, and western Zimbabwe (see Figure 2). Maximum values were found at Bloemfontein, South Africa (402 mm) and at Mahalapye, Botswana (452 mm). Many locations that missed the previous week's rains received significant amounts this week. Over the eighteen-day period, most cities reported well-above normal precipitation percentages (see front cover). The few exceptions included coastal Mozambique and parts of Transvaal state in South Africa, along with the normally arid regions of western South Africa and Namibia.

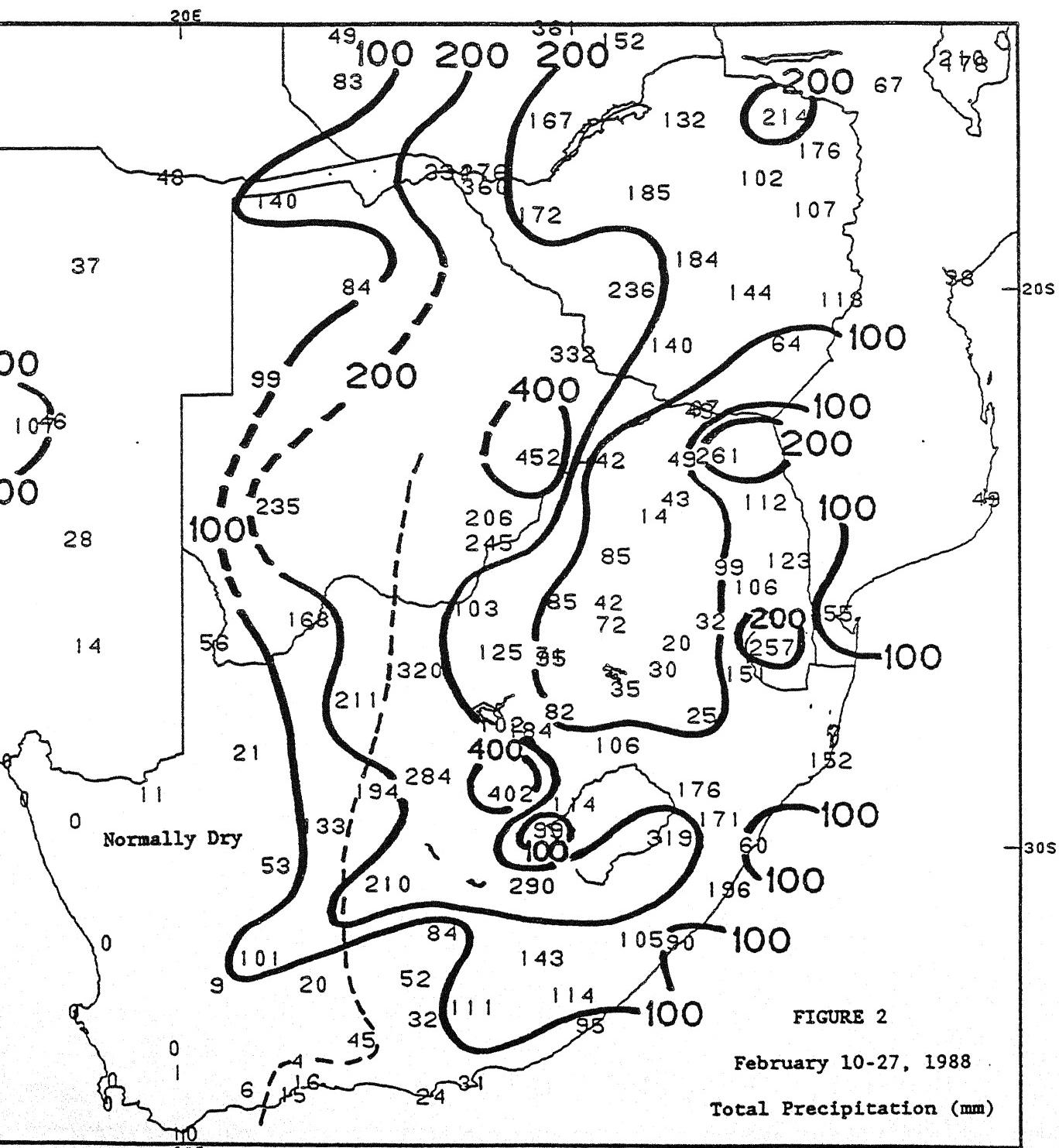


FIGURE 2

February 10-27, 1988

Total Precipitation (mm)

